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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,691	09/22/2003	Rameshkumar G. Illikkal	P16487	9250

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EXAMINER
WALSH, JOHN B

ART UNIT	PAPER NUMBER
2151	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/667,691	ILLIKKAL ET AL.
	Examiner	Art Unit	
	John B. Walsh	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-28* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *2/10/05*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Double Patenting

1.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

        Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2.   Claims 1, 12, 13, 17, 21, 22, 24 and 28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 6, 8, 9, 14, 19, 21 and 22 of copending Application No. 10/712,640. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to similar claim scope wherein claims 1, 13, 17, 22 and 24 are drawn to claims 1, 8, 14, 19 and 21 of application '640; claim 12 is drawn to claims 9 and 22 of application '640 and claims 21 and 28 are drawn to claims 5 and 6 of application '640.

        This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No.

5,056,058 to Hirata et al.

As concerns claims 1 and 13, speculating that a connection will subsequently have a

packet (column 5, line 23) to be processed in accordance with a transmission control protocol

(abstract, lines 4-5); and arranging for a packet processing engine (figure 2; 201,204,207) to

pre-fetch from an external memory (column 6, lines 11-14-table) unit a protocol control block

(column 6, lines 11-14-header components) associated with the connection (column 6, lines 11-

14).

As concerns claims 2 and 14, wherein the packet to be subsequently processed is a send

packet (column 5, lines 22-25; send packet with respect to Eb figure 6) and said speculating is

based on a receive packet (column 5, lines 22-25; receive packet with respect to Ea figure 6).

As concerns claims 3, 7 and 16, calculating a time (figure 9-time when appropriate step

should take place; column 9, lines 30-42) when the protocol control block is to be pre-fetched

from the external memory unit.

As concerns claim 4, the method of claim 3, wherein the time is calculated in accordance

with an estimated processing time (figure 9, 810) associated with the receive packet less an

estimated latency time associated with pre-fetching the protocol control block from the external

memory unit (column 7, lines 36-50).

As concerns claims 5 and 9, further comprising: dynamically adjusting at least one of: (i) the estimated processing time or round-trip time, and (ii) the estimated latency time (column 9, lines 30-41).

As concerns claims 6 and 15, wherein the packet to be subsequently processed is a receive packet (column 5, lines 22-25; receive packet with respect to Ea figure 6) and said predicting is based on a send packet (column 5, lines 22-25; send packet with respect to Eb figure 6).

As concerns claim 8, the method of claim 7, wherein the time is calculated in accordance with an estimated round-trip time associated with the send packet less an estimated latency time associated with pre-fetching the protocol control block from the external memory unit (column 7, lines 36-50; figure 9, 810).

As concerns claim 10, the apparatus of claim 1, wherein said speculating is performed by the packet processing engine (figure 2; 201,204,207).

As concerns claim 11, the apparatus of claim 1, wherein said speculating is performed by a host processor (column 4, line 1) and said arranging comprises: pushing the protocol control block from the external memory unit (table in memory) to the packet processing engine.

As concerns claim 12, the apparatus of claim 1, wherein the packet processing engine is associated with a network interface card (column 3, lines 65-66).

As concerns claim 17, an apparatus, comprising: a packet processing engine (figure 2; 201,204,207); and an input path to receive from an external memory unit (column 6, lines 11-14-table) a pre-fetched protocol control block for a connection predicted to subsequently have a packet to be processed by the packet processing engine in accordance with a transmission control protocol (column 6, lines 11-14).

As concerns claim 18, the apparatus of claim 17, wherein the packet processing engine comprises a network interface card (column 3, lines 65-66) acting as a transmission control protocol offload engine for a host processor (column 4, line 1).

As concerns claim 19, the apparatus of claim 18, wherein the packet processing engine predicts the connection and calculates a time when the protocol control block should be pre-fetched from the external memory unit (figure 9-time when appropriate step should take place; column 9, lines 30-42).

As concerns claim 20, the apparatus of claim 18, wherein the host processor speculates the connection and calculates a time when the pre-fetched protocol control block should be pushed to the packet processing engine from the external memory unit (figure 9-time when appropriate step should take place; column 9, lines 30-42).

As concerns claim 21, the apparatus of claim 17, further comprising: a protocol control block cache local (local since at same computer device; column 6, lines 11-14-table) to the packet processing engine to store the pre-fetched protocol control block.

As concerns claim 22, an apparatus, comprising: a host processor (column 4, line 1); and an output path to arrange for a packet processing engine (figure 2; 201,204,207) to pre-fetch from an external memory unit (column 6, lines 11-14-table) a protocol control block (column 6, lines 11-14-header components) for a connection predicted to subsequently have a packet to be processed by the packet processing engine in accordance with a transmission control protocol (column 6, lines 11-14).

As concerns claim 23, the apparatus of claim 22, wherein the host processor is adapted to schedule a time for the pre-fetch (figure 9-time when appropriate step should take place; column 9, lines 30-42; Note: it has been held that the recitation that an element is "adapted to" perform a

function is not a positive limitation but only requires the ability to so perform. It does not

constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138).

As concerns claim 24, a system, comprising: a dynamic random access memory unit

(202,205); and a network interface card (column 3, lines 65-66), including: a packet processing

engine (figure 2; 201,204,207), and an input path to receive from the dynamic random access

memory unit a pre-fetched protocol control block (column 6, lines 11-14-header components)

for a connection predicted to subsequently have a packet to be processed by the packet

processing engine in accordance with a transmission control protocol (column 6, lines 11-14).

As concerns claim 25, the system of claim 24, further comprising: a host processor

(column 4, line 1), wherein the packet processing engine is a network interface card (column 3,

lines 65-66) acting as a transmission control protocol offload engine for the host processor.

As concerns claim 26, the system of claim 25, wherein the packet processing engine

predicts the connection and calculates a time when the protocol control block should be pre-

fetched from the dynamic random access memory unit (figure 9-time when appropriate step

should take place; column 9, lines 30-42).

As concerns claim 27, the system of claim 25, wherein the host processor predicts the

connection and calculates a time when the pre-fetched protocol control block should be pushed

to the packet processing engine from the dynamic random access memory unit (figure 9-time

when appropriate step should take place; column 9, lines 30-42).

As concerns claim 28, the system of claim 24, wherein the network interface card further

includes: a protocol control block cache (column 6, lines 11-14-table; see also column 8, line

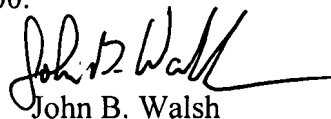54) to store the pre-fetched protocol control block.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Walsh whose telephone number is 571-272-7063. The examiner can normally be reached on Monday-Thursday from 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John B. Walsh
Primary Examiner
Art Unit 2151